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ENTOMOLOGICAL NEWS

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Some New American Syrphid Flies (Diptera).

By F. M. HULL, University of Mississippi.

Several new species of Syrphid flies have accumulated in the collections of the author and are here described. Types unless otherwise stated are in the author's collection.

Eristalis incubus new species.

Characterized by the black-velvet opaque mesonotum, the transverse suture linearly margined with brownish-yellow pollen. The hind femora are shining black, their tibiae dark brown, without apical spur. Related to *taenia* Wiedemann.

♀. Length 11 mm. *Head:* the cheeks are shining black; the face and lower part of the front are pale brownish-yellow and broadly over the sides are white pubescent and white pilose. Antennae and arista pale brown, the latter bare. The upper portion of the front is light brown pollinose with chiefly blackish pile throughout the middle and entirely black in front of the ocelli. Viewed dorsally there are three, narrow, linear black vittae on the upper part of the front. The occiput is dark brown pollinose, black margined, the immediate eye margins narrowly yellowish pubescent.

Thorax: mesonotum opaque black behind the suture and largely opaque black in front; the anterior margin of the suture linearly, the lateral margin, the humeri and the anterior margin are, light to dark brown pollinose. The scutellum is yellow; the base is very narrowly black, the pile of the basal half of the apex is long and yellow with numerous long black hairs across the posterior half. Pile of mesonotum yellow in front of the suture and immediately behind it; long and black on the remainder and upon all of the post calli except the anterior corner. The pleural pile is wholly pale; the squamae dark brown.

Abdomen: first segment black and narrowly yellow in front on either side of the middle and upon the anterior and posterior corners. The second segment is pale yellow with a large posterior black triangle reaching more or less broadly to the anterior margin. Extreme posterior margin of the segment is yellow. The posterior corners of the segment are more or less black. Third segment similarly marked, the median portion of the central spot often much broader and extending widely upon the anterior margin. The lateral margin of the segment is widely black in the female and linearly black in the male. Fifth segment opaque black, yellow margined posteriorly with a central, narrow, medially interrupted, laterally expanded, shining black fascia.

Legs: shining black; the apices of the femora are reddish to yellow; the front and middle tibiae are light yellow basally, growing gradually darker apically where they are almost black. The hind tibiae are dark brown and paler at the extreme base; tarsi brownish black, the middle basi tarsi lighter.

Wings: hyaline.

Holotype: Female; Curityba, Paraná, BRAZIL, collector Claratiano, 10, 7, 1936 in the author's collection.

Xylota althaea new species.

Hind femora only narrowly brownish at the base and less swollen than in *metallica* Wiedemann.

♀. Length 8 mm. *Head:* the face, front and vertex shining black, the former and a central transverse fascia across the middle of the front whitish pubescent. The pile of the front is white except in front of the ocelli and occupies all but a short distance in front of the antennae. The ocellar pile is black. Post ocellar pile white. Antennae brown, the third joint blackish above and light red below. Arista quite short, barely longer than the length of the antennae; its basal half is pale orange, then dark brown, the apex orange.

Thorax: mesonotum dully shining black with a coppery reflection; the pile is erect, short and whitish yellow with a small patch of black bristles above the base of the wing; the post calli pile is wholly pale, the scutellum concolorous, the pile white.

Abdomen: entirely black with faint bluish reflections; pile short, appressed in the posterior corners, erect in the basal

corners and black over the central posterior portions of the second and third segments, which together with the median vittae are more nearly opaque. The region of the usual spots of the second and third segments is completely shining bluish-black.

Legs: whole of first and second femora light reddish-brown; basal sixth of hind femora similarly colored, diffusely merging into the blackish remainder; the extreme apex of the hind femora is brown; front and middle tibiae and their first two tarsal joints brownish-yellow. Hind femora light brown at the base, dark brown elsewhere, their tibiae dark brown above, light brown below.

Wings: pale brown; stigmal cell darker.

Holotype: Female; Spartanburg, SOUTH CAROLINA, June 5, 1917.

Lejops grisescens new species.

Related to *relictus* Curran and Fluke. It is smaller and distinguished by a blackish coloration and distinctly grey fascia.

♀. Length 6 mm. *Head:* the cheeks, face and front are black; the face is reddish-brown about the middle and covered with yellowish-white pubescence and sparse white pile. There is some sparse golden-brown pollen on the front which is almost bare in front of the antennae. The pile of the front and vertex is black; the extreme occipital pile yellowish. Antennae brown, the third joint light reddish, a little darker above. Arista light brown.

Thorax: mesonotum light grey pollinose with three opaque black vittae. The scutellum is shining black; the margin is quite narrowly yellowish-brown. Pile of thorax everywhere pale yellowish-white.

Abdomen: about two and one-half times as long as wide, black, shining upon the posterior margin of the second and third segment and subopaque upon the remainder of these segments where not covered by pale grey fascia. The whole of the first segment, a central, widely separated, transverse, sublunate grey fascia, its lateral ends reddish and extended to cover all the remainder of the anterior margin of the second segment only are light grey pollinose. Third segment with a similar pair of less widely separated sublunate fascia lying a little before

the middle, their lateral ends not reddish but extended forward to the anterior corners. There is a small, medial, apical grey triangle on this segment. Fourth segment, similar, the apical triangle expanded to cover all the posterior margin, but narrowly towards the sides. Fifth shining black on the base, widely pale grey on the remainder and narrowly divided by an extension from the basal black.

Legs: femora shining black, the anterior four more pollinose posteriorly, the hind pair yellowish narrowly upon the base and narrowly preapically; the others are yellowish upon the apex. The first four tibiae and their first four tarsal joints are light yellow. The hind tibiae are very dark brown, a little lighter at the narrow base and are almost yellow across the middle; they end in a rather blunt triangular scoop. Hind tarsi brownish.

Wings: pale yellowish-brown, stigma almost as wide as deep.

Holotype: Female; Riverton, New Jersey, June 18, 1920. Paratype: a female. August 10, 1920; F. M. Hull collector.

Sphaerophoria transversa new species.

Related to *micrura* O. S., the cheeks, and the whole of the femora are yellow; the pattern of the abdominal fascia is different; facial pile white.

♂. Length 8 mm. *Head:* the front, face and cheeks are pale yellow except for a hemispherical brown spot above the antennae and an elongate brown spot over the facial tubercle. The pile of the front and face is black and upon the latter limited to a narrow row along the outer margin. The antennae are orange-brown, the third joint dark brown except upon the base and ventral margin. Arista dark brown.

Thorax: mesonotum metallic brassy, the humeri, the notapleurae from humerus to suture, the posterior part of mesopleurae, the upper part of sternopleurae, a part of propleurae and the scutellum pale yellow. The mesonotal and pleural pile is yellow and the scutellar pile long and black.

Abdomen: elongate, rather flattened, and dark brown marked with yellow as follows: the anterior corners and most of the lateral margins of the first segment, a central, rather slender fascia across the middle of the second segment, slightly more narrow medially, a similar wider fascia on the third segment,

not narrowed in the middle, and each half of which is barely oblique. There is a still wider, slightly more oblique fascia across the fourth segment placed just before the middle of the segment; the fifth segment has four, small, obscure yellowish spots.

Legs: the femora and the first four tibiae and front coxae and trochanters are wholly light yellow, their tarsi pale brown almost yellow. The hind tibiae are pale brown on the apical third and subbasally, yellow between, their tarsi darker brown.

Wings: pale brown, the stigma light brown.

Holotype: Male; Near Portland, OREGON, July, 1926 (F. M. Hull).

Salpingogaster diana new species.

Related to *lineata* Sack. in the type of coloring upon the wing; the scutellum is brown and the pleura wholly dark brown.

♀. Length 13 mm. *Head:* the front and vertex are brownish-black, the lower protuberant part of the front is polished; there are two pairs of tiny eye-marginal yellow spots located in the front, a pair above, a pair below. The face is pale yellow and very broadly brown over the middle and tubercle as far as the antennae. The cheeks and the antennae are light brown.

Thorax: mesonotum dark chestnut-brown, the marking obscure because of the age and preservation but with a pair of widely separated velvet-black vittae that appear to be confined to the anterior half of the thorax. The pleurae are entirely brown, the scutellum brown, the disc diffusely darker.

Abdomen: petiolate and entirely brown, the first and second segment and extreme base of third light reddish-brown. The remainder of the abdomen is brownish-black. The second segment is elongate, quite slender, almost cylindrical, a little wider posteriorly and about seven times as long as its subbasal width. Viewed dorsally the cylindrical third and fourth segment is very strongly expanded just below its immediate base.

Legs: pale yellow, the anterior and middle femora brownish-yellow; the hind femora pale brown except the apex; the hind tibiae are brownish-yellow except for a pale brown annulus. Pile of hind femora black.

Wings: pale yellow, the costal and subcostal cell dilute brownish-yellow, the submarginal cell and basal anterior por-

tion of the first and second basal cell yellowish or brownish-yellow.

Holotype: Female; labeled BRAZIL, without further data; received some years ago in miscellaneous material from Brazil.

Mesogramma sylvatica new species.

Characterized by the spatulate abdomen, the slender connections of the geminate spots, the wide complete fascia on the second segment etc.; related to *musicus* Fabr.

♂. Length 7 mm. *Head:* front and face yellow, the latter very little produced forward; the cheeks are blackish; the antennae are light brown, darker upon the apical two-thirds of third joint.

Thorax: brassy black with thick golden-brown pollen. The humeri and the entire lateral margin are yellow. Scutellum yellowish-brown, the margin lighter, the disc darker, the sparse long pile black.

Abdomen: elongate, flattened, sub-spatulate, the apical segments very little wider than the basal ones. The first segment is yellow with narrow, shining black posterior margin, the black attenuated laterally. Second segment light orange-brown, the basal third brown except for the anterior corners and a narrow lineal anterior margin. The posterior third of the segment is black leaving a continuous middle stripe of yellow. Third segment is yellowish-brown with a pattern of black as follows: hind third of the segment in the middle, which expands to become a little deeper on the lateral margin, and sublaterally the black sends an anterior extension forward to within a short distance of the anterior margin; submedially the interrupted black posterior fascia sends forward paired lineal extensions that connect with prominent, almost equilateral, triangles of black whose upper angles touch the base of the segment and whose outer angles almost contact the sublateral extension; these triangles are concave on medial and basal margins. Fourth segment with a quite similar pattern, the sublateral black extensions except for small breaks reaching the anterior margin and the posterior black fascia is narrowly replaced by yellow along the central portion of the posterior margin. Fifth segment with a rhomboid, median, black triangle reaching from

base almost to apex and a pair of sublateral zig-zag vittae. Hypopygium with a large black spot.

Legs: yellow. Hind femora with a subapical black annulus, hind tibiae with a subbasal one.

Wings: grey hyaline, the alulae narrow and strap-shaped.

♀. Similar to the male. Face yellow. The abdominal pattern is similar, the sublateral black extensions of the third and fourth segments are short and broadly disconnected from a sublateral black spot lying between them and the anterior margin. Sublateral vittae of the fifth broken up each into two spots.

Holotype: Male; Baños, ECUADOR, July 5, 1938, W. C. MacIntyre. Type in the collection of Dr. C. L. Fluke.

Mesogramma sylpha new species.

Abdomen slender, narrow basally; the third and fourth segments with yellow crescents, median vittae and sublatero marginal markings; related to *M. tridentatum.*

♂. Length 6 mm. *Head:* the front is blackish except narrowly along the sides. Face greatly produced forward, its apex truncate and extending to or beyond the apex of the third antennal joint. The antennae are reddish below, blackish above.

Thorax: blackish upon the mesonotum with the humeri and lateral margins continuously yellowish-brown. Scutellum yellowish-brown, diffusely darker upon the disc.

Abdomen: spatulate. The first segment is dark brown except upon the sides, the second segment chocolate-brown with a yellow pattern as follows: a narrow median yellow vitta attenuated anteriorly and posteriorly and narrowly separated from an oval yellow spot near the middle of the segment on either side; each of these yellow spots is narrowly connected with a transverse, lateral extension of yellow. Third segment with similar attenuated median vitta and upon the anterior two-thirds of the segment a pair of crescentic yellow spots, their concave surfaces faced medially and which anteriorly connect with an oblique subbasal and sublateral yellow fascia; posteriorly the sublateral stripe of vittae is evanescent just beyond the middle of the segment. Fourth segment with similar pattern. Fifth segment with four slightly diagonal, yellowish vittae which reach and connect narrowly along the anterior margin and extend only through the anterior two-thirds of the segment.

Legs: light brownish-yellow, the hind femora and tibiae with wide apical and subbasal smoky bands.

Wings: nearly hyaline, the alulae wanting.

♀. Abdomen flattened, spatulate, wider and more oval, especially upon the posterior two-thirds. In general the pattern is similar, the submedial and sublateral yellow spots of the second segment are connected more broadly and the sublateral and submedial spots of the third and fourth segment are broadly connected by a basal yellow fascia. Spots of the fifth segment are more triangular and more broadly connected basally. Alulae narrow and strap-like.

Holotype: Male; Baños, ECUADOR, May 13, 1939, 2500 meters, W. C. MacIntyre. *Allotype:* female; same locality, July 9, 1938, 1800 meters, same collector. Types in the collection of Dr. Charles L. Fluke.

Mesogramma ornata new species.

Characterized by the yellowish-red pattern of the abdomen; related to *confusa* Schiner.

♂. Length 5 mm. *Head:* the face and front are yellow, the antennae orange, the cheeks blackish. Vertical pile short and black, vertical triangle brownish-yellow pollinose.

Thorax: posterior half of mesopleurae, upper part of sternopleurae, humeri, entire lateral margins and a wide margin around the scutellum, light yellow. Mesonotum brassy brownish-black, bluish on the anterior margin and upon a medial vitta which is greyish or brownish pollinose and is continued to the shining brownish-black scutellum. Scutellar pile long, erect, chiefly pale with a few brownish marginal hairs.

Abdomen: with nearly parallel sides; the first segment is blue-black, its anterior margin and corners yellow. Second segment sepia and opaque with a central, bilunate, narrowly divided, narrow fascia; apical margin reddish. Third segment with central lunate spots as in *confusa* Schiner; they are narrowly separated from the corner triangles whose medial margins curve; posterior portion of the segment widely reddish-brown, the medial, anterior center and the remaining area of the segment opaque brown; posteriorly this lateral extension of dark brown coloration extends medially inward to meet and con-

tinue upwards to the central brown spot. Fourth segment with a similar pattern, the basal triangles further apart from the submedial crescent-like spots. Fifth segment with a central, rounded, opaque brown spot and an obscure sublateral vittate spot on either side.

Legs: yellow. Hind femora with wide black subapical annulus, their tibiae dark brown through the middle, their tarsi brown.

Wings: hyaline, the alulae well developed.

Holotype: Male; Villarica, PARAGUAY, January, 1938, F. Schade collector. Type in the collection of Dr. Charles L. Fluke.

Further Notes on Aero-Plankton of Kentucky.

By H. ELLIOTT MCCLURE, Ord, Nebraska.

(*Continued from Page 11*)

HOMOPTERA. Cicadellidae; Aphididae (see McClure, 1942); * Coccidae, *Pseudococcus* sp., 28. One hundred and sixty-four unidentified leafhoppers were captured in this series, and they proved to be most abundant in the collections at the beginning of May in both morning and evening. None were taken in the morning collections after the first week of June, but the evening numbers continued weakly after a small peak during the four days preceding June 7. The evening collections were generally greater than those of the morning.

Twenty-eight male coccids, thought to be nearly all of the genus *Pseudococcus,* were taken during these collections. Only one was taken in the evening, and all were collected during the four days preceding May 22, when the temperature was rising, the humidity decreasing, and the light intensity increasing.

* McClure, H. E., Spring Aphid Aero-plankton (Homoptera). Ent. News, LIII, pp. 67–70.

COLEOPTERA. Carabidae: *Agonoderus comma* Fab., 2, *Agonoderus pallipes* Fab., 5, *Tachistodes partiarius* Say, 1, *Tachistodes indistinctus* Dej., 2, *Tachistodes testaceus* Dej., 25, *Stenolophus conjunctus* Say, 1, *Stenolophus ochropezus* Say, 9, *Stenocellus rupestris* Say, 6, *Micratopus* sp., 12, *Tachys incurva* Say, 1, *Tachys aenescens* Lec., 2, *Tachys tripunctata* Say, 1, *Tachys laevus* Say, 11, *Tachys coruscus* Lec., 2, *Tachys* sp., 2, *Bembidion intermedium* Kby., 2, *Bembidion affine* Say, 3, *Schizogenius lineolatus* Say, 1, *Clivina impressifrons* Lec. 2, *Dyschirius haemorrhoidalis* Dej., 1.

Of the 88 carabids taken, only four were collected in the morning. They were abundant during the first of May, but fell off rapidly coinciding with decreasing temperature preceding May 14. They increased with increasing temperature to the twenty-second, and fell away again during the cool spell preceding the twenty-sixth. They were most abundant the four days preceding June 3, and disappeared after that peak.

Hydrophilidae: *Cercyon quisquilius* Fab., 7, *Cercyon haemorrhoidalis* Fab., 2, *Cercyon pygmaeus* Illig., 6, *Cryptopleurum americanum* Horn, 1, *Cymbiodyta vindicata* Fall, 1, *Pemelus costatus* Lec., 1, *Philhydrus nebulosus* Say, 1, *Ochthebius nitidus* Lec., 1. Only 14 specimens of *Cercyon* were taken and three species represented. They were more or less evenly distributed throughout the collections, but were apparently most active from May 18 to June 15. Most were taken in the evening.

Silphidae: *Anisotoma* sp., 2, *Anisotoma obsoleta* Melsh., 2, *Cyrtusa egena* Lec., 4; Scydmaenidae: undetermined, 10; Orthoperidae: *Sericoderus flavidus* Dec., 2, *Sericoderus obscurus* Lec., 2, *Molamba* sp., 2; Staphylinidae: 3,389.

The morning and evening collections of staphylinids were apparently similar in response to the weather, but the evening population was always more than double that of the morning. The four days preceding May 22 and June 3 were the periods of greatest numbers, with low activity preceding and following them. The activity seemed to increase with increasing tem-

peratures. The numbers also apparently increased with changing humidity, following more closely rising than falling humidity. These 3,389 specimens were in the collection of Dr. Ralph Voris at the time of his death in 1940 and have as yet been incompletely identified. Any coleopterist wishing to examine these specimens is welcome to do so.

Pselaphidae: *Bibloplectus ruficeps* (Lec.), 291, *Rhexius insculptus* Lec., 1, *Brachygluta illinoisensis* Brendel, 1. Almost the entire group of *Bibloplectus ruficeps* was collected in the evening, as only four individuals were taken in the morning. Females made up 53 per cent and males 47 per cent of the group. The period of greatest flight was in May with a complete cessation of activity in the four days preceding May 26. The collections in June did not equal those in May, and dwindled toward the middle of the month.

Ptiliidae, undetermined. There were 161 ptiliids taken in the study. These minute beetles did not follow the general trend of the insect activity as indicated by the numbers caught. They were at a low ebb while most of the rest of the flying forms were numerous. The two peaks came in the four days preceding May 18 and June 11. Most of them were taken in the evening, but a few were collected in the morning.

Scaphidiidae: *Baeocera concolor* Fab., 1, *Scaphisoma terminatus* Melsh., 1; Histeridae: *Phelister subrotundus* Say, 8, *Acritus* sp., 6, *Aeletes politus* Lec., 1. There were three species and 15 specimens of histerids in the collections. Four specimens were taken in the morning and the remaining 11 in the evening. They did not appear until after May 10 and disappeared by June 15.

Cantharidae: *Cantharis* sp. 1.

Mordellidae: *Mordellistena nigricans* Melsh., 4, *Mordellistena liturata* Melsh., 1.

Anthicidae: *Malparus formicarius* Laf., 1, *Sapintus pubescens* Laf., 1, *Notoxus monodon* Say, 5, *Notoxus bicolor* Say, 2, *Anthicus cervinus* Laf., 22. The five species and 33 specimens of anthicids represented were all taken in the evening, and were

not abundant enough to be taken in very large numbers. They were more active in early May.

Elateridae: *Monocrepidius bellus* (Say), 85, *Hypnoidus pectoralis* Say, 2. The number of elaterids increased from the cool period preceding May 14 to a peak of activity in the four days preceding May 22. This accompanied a rise in temperature. None were collected during the cool period of May 26, but they again increased in numbers with rising temperatures to June 3.

Buprestidae: *Anthaxia quercata* Fab., 1; Heteroceridae: *Heterocerus pusillus* var. *limbatus* Kies., 33. During the collections 33 specimens of this species were taken, five of these in the morning. The evening activity was up during the four days preceding May 10 and then gradually declined to zero by June 7.

Helodidae: *Helodes pulchella* Guer., 1.

Dermestidae: *Anthrenus verbasci* (Linn.), 1.

Nitidulidae: *Epuraea labilis* Fr., 1, *Carpophilus antiguus* Melsh., 1.

Monotomidae: *Monotoma americana* Aubé, 57, *Monotoma picipes* Hbst., 2, *Monotoma fulvipes* Melsh., 1, *Bactridium striolatum* Reitt., 2, *Bactridium ephippigerum* Guer., 2. All but two of the *Monotoma americana* were taken in the evening, and their activity increased in progressive peaks from a low point in the first days of May to a peak on June 11.

Cucujidae: *Carthartus advena* Waltl., 8, *Pediacus depressus* Herbst., 1, *Laemophloeus testaceus* Fab., 1, *Laemophloeus pusillus* Schon., 1, *Silvanus imbellis* Lec., 1.

Cryptophagidae: *Tomarus pulchellus* Lec., 13, *Anchicera ochracea* Casey, 22, *Anchicera pusilla* Payk., 5, *Anchicera ephippiata* Zimm., 1, *Cryptophagus acutangulus* Gyll., 2. The cryptophagids were represented by 42 specimens. Most of *Tomarus pulchellus* Lec. were taken during May. *Anchicera ochracea* Casey was more abundant than *T. pulchellus* and all specimens were taken in the evening. These were more or less evenly distributed throughout the collections, with periods of activity preceding May 22 and June 7.

Mycetophagidae: *Typhaea fumata* Linn., 22, *Litargus balteatus* Lec., 1, *Litargus 6-punctata* Say, 3. *Typhaea fumata* was most active in the four days preceding June 7, and at other times was present in small numbers.

Colydiidae: *Synchita fuliginosa* Melsh., 2.

Lathridiidae: *Melanophthalma simplex* Lec., 46, *Melanophthalma distinguenda* Com., 5, *Melanophthalma villosa* Zimm., 1, *Corticaria elongata* Gyll., 53, *Corticaria ferruginea* Marsh., 3, *Corticaria serrata* Payk., 1. One hundred and four latridids were taken during the studies, and only three of these in the morning. They were not numerous until after the cool period of May 26, and then two peaks during the periods of June 3 and June 15 were noted.

Endomychidae: *Anamorphus waltoni* Blatch., 1.

Phalacridae: *Phlacrus simplex* Lec., 1.

Coccinellidae: *Scymnus terminatus* Say, 1.

Tenebrionidae: *Alphitophagus bifasciatus* Say, 1.

Melandryidae: *Canifa plagiata* Melsh., 1.

Anobiidae: *Stegobium paniceum* Linn., 1, *Catorama confusum* Fall, 14. One specimen of the drug store beetle, *Stegobium paniceum* Linn., was taken on June 7 in the evening. The species *Catorama confusum* Fall was represented by 14 specimens, two of which were taken in the morning. They were not abundant in any collection except one made at midnight of June 2.

Scarabeidae: *Aphodius stercorosus* Melsh., 13, *Aphodius distinctus* Müll., 7, *Aphodius lividus* Oliv., 1, *Aphodius granarius* Linn., 4, *Ataenius strigatus* Say, 6, *Ligyrus gibbosus* DeG., 3, *Onthophagus pennsylvanicus* Harold, 1. During the seven weeks 35 scarabeids were taken. Only four of these were caught in the morning. The activity was greatest early in May, and they had disappeared by the first week of June. The May 26 cool spell did not reduce their activity.

Chrysomelidae: *Epitrix parvula* Fab., 14, *Epitrix fuscula* Crotch, 1, *Epitrix cucumeris* Harr., 1, *Blyptina spuria* Lec., 1, *Phyllotreta vittata* Chev., 8, *Diabrotica* 12-*punctata* Fab., 1, *Diabrotica vittata* Fab., 1. Twenty-nine chrysomelids were

taken. *Epitrix parvula* was most active in the middle of May. *Phyllotreta vittata* was not taken until the first of June, and ceased flying by June 11.

Scolytidae: *Xyleborus pecanis* Hopk., 4, *Xyleborus affinis* Eichh., 3, *Xyleborus confusus* Eichh., 1, *Pityophthorus rhois* Sw., 2.

Coleoptera larvae. Two larvae of the first instar and probably teleophorids were taken, both in the evening.

Strepsiptera. One male, undetermined, taken in the evening on the nineteenth of June.

Micro-lepidoptera. Micro-lepidoptera as well as the Ephemerida were mutilated by this method of collecting, and no attempt was made to identify them. Eighty-seven were taken, none in the morning. In general, except for a peak on June 11, the number of moths was smaller and smaller at 6 P.M. as the season progressed, probably because of the movement of the sun.

Diptera. Tipulidae: *Gonomyia subcinerea* O. S., 1, *Gonomyia kansensis* Alex., 1.

Psychodidae: *Psychoda* sp., 22, *Psychoda alternata* Say, 13, *Psychoda cinerea* Banks, 8, *Psychoda minuta* Banks, 2, *Pericoma* sp., 2. Forty-seven psychodids were taken, and five of these in the morning. The evening activity was constant during most of May, with a slight peak at the twenty-sixth, and a depression in the period of the thirtieth. This low point was four days later than that of the other insects. *Psychoda* sp., probably *alternata* Say, was represented by 11 females and two males, or 84 per cent females and 16 per cent males. *Psychoda* sp., probably *cinerea* Banks, was represented by six females and two males, a ratio of 3:1. Most of these specimens were taken in the latter part of May. *Psychoda* sp., probably *minuta* Banks, was represented by two females. A male and a female of a species of *Pericoma* were also collected. A fourth species of *Psychoda* was represented by 21 females and one male. This species was encountered during the first half of May and the four days preceding June 3.

Chironomidae. The movements of the chironomids preceded by several days those of the staphylinids. The morning collections showed three peaks of abundance. The evening numbers were not only more than double that of the morning, but the greatest collections were in the four days preceding May 14, a full two weeks before the greatest staphylinid flight. The total number of chironomids taken was 3,796. Because of the difficulties involved, no attempt has been made to identify the species.

Mycetophilidae: 14 specimens undetermined.

Sciaridae: *Sciara nacta* Johann., 3600, undetermined 109. Over 3,700 sciarids were taken and *Sciara nacta* Johann. made up 97 per cent of these. There were six times as many individuals taken in the evenings as in the mornings. Except for a small peak of May 22, they came forth in one sudden immense flight in the four days preceding June 3. The morning activity consisted of 17 per cent males and 83 per cent females. With rising temperature and humidity preceding June 3 there were great numbers of females flying, while the greatest number of males came four days later. The immense evening activity consisted of three per cent males and 97 per cent females. These percentages are misleading, for the males collected hardly varied from morning to evening there being a total of 101 specimens taken in the morning and 99 taken in the evening. The females taken varied greatly from morning to evening. The total for the morning was 470 and for the evening, 2,930. With the increasing temperature preceding May 22 there was a burst of activity of females, followed by a rapid decline during the four cool days following. With increasing temperature and humidity preceding June 3, the female activity again increased rapidly to a climax on June 2. The number immediately subsided, apparently in conjunction with continued warm weather. The male peak followed the female by four days.

Cecidomyiidae. The 508 cecidomyiids taken in this work seemed to show an entirely different response to the climate from that of the staphylinids and sciarids. The morning collections were low and with no peaks of activity. The evening

collections were high early in May and fell off rapidly to the four days preceding May 26, during which there was a sudden increase. The May 26 increase came at a time when most other forms were inactive.

Syrphidae: *Melanostoma mallinum* Linn., 1, *Metasyrphus wiedemanni* (John.), 2, *Metasyrphus meadii* (Jones), 1.

HYMENOPTERA. Ichneumonoidea. Seventy-seven ichneumons were taken, and of those collected in the morning, the greatest abundance was in early June. Numbers flying in the evenings increased in the middle of May. The evening activity was double that of the morning.

Tiphiidae: *Tiphia* sp., 1.

Formicidae: *Ponera coarctata pennsylvanica* Buckley, 14, *Pheidole pilifera* Roger, 70, *Tapinoma* sp., 12, *Leptothorax curvispinosus* Mayr., 1, *Camponotus caryae* Fitch, 1, *Eciton schmitti* Em., 1, *Trachymyrmex septentrionalis* McCook, 1. During the seven weeks, 100 ants were collected, and 56 of these were taken on June 18 during a very heavy flight of *Pheidole pilifera* Roger. This flight occurred about 6:15 P.M., temperature 68° F., and immediately following a drenching rain. The clouds were breaking up and humidity was very high. Previous to June 15 there had been few ants encountered, but in the eight days preceding June 19 they increased, with June 18 as the peak. Apparently the collections were stopped just at the beginning of the early summer nuptial flights of ants. There was very little morning activity. *Ponera coarctata pennsylvanica* males were not taken until the four days preceding June 11, and the females until the four days preceding June 19. Flying males were more abundant than the females, being 73 per cent of the total. *Pheidole pilifera* was not collected until the four days preceding June 11. Both males and females were flying together, but there was ten per cent females and 90 per cent males in the air. During the peak of activity on June 18, there were 17 males to each female flying. *Tapinoma* sp. was active only in the mornings, and all taken were males.

Bethylidae: *Pseudoisobrachium myrmicophilum* Ash., 4, *Ateleopterus* sp., 1, *Goniozus platynotae* Robertson, 1. Prosopidae, *Colletes brevicornis* Robertson, 1.

Halictidae: *Halictus illinoensis* Robertson, 18, *Halictus pilosus* Smith, 1, *Halictus sparsus* Robertson, 1, *Halictus versatus* Robertson, 6, *Halictus* sp., 3, *Augochloropsis cuprea* Smith, 1. Only five halictids were taken in the evening. No species was abundant until after June 7.

Apidae: *Apis mellifera* Linn., 4.

SUMMARY.

A net ten inches in diameter was attached to the right fender of an automobile and collections of flying insects were made morning and evening over a four mile stretch of road near Horse Cave, Kentucky, for the seven weeks from May 3 to June 20, 1934.

Of the determinations made to date, there were 196 species, 33 of which were taken abundantly or regularly and the remainder only occasionally. Of 65 families represented, the Sciaridae, Chironomidae and Staphylinidae were the most numerous. Over 3,000 specimens of each of these families were collected. Besides these three, 29 other families were frequently encountered and are discussed.

It seems apparent that there were more species and individuals flying, at the times of the collections, in the evening than in the morning. The response to the climate varied with each group, and a definite succession of forms is shown.

Undescribed Species of Crane-Flies from the Western United States and Canada (Dipt.: Tipulidae). Part I.

By CHARLES P. ALEXANDER, Massachusetts State College, Amherst, Massachusetts.

Very intensive work on the rich Tipulid fauna of the western Nearctic Region has been done in recent years. During the course of these studies, many new species of these flies have been discovered and are being described. In the present article

I am discussing four species of Eriopterini that were included in an interesting series of these flies kindly presented to me by Dr. Henry K. Townes, who collected the specimens in Washington and California. I wish to express my deepest thanks to Dr. and Mrs. Townes for the privilege of retaining these specimens in my extensive collection of Tipulidae.

Erioptera (Hoplolabis) rainieria n. sp.

Erioptera (*Hoplolabis*) *rainieria* is readily distinguished from its nearest described relative, *E.* (*H.*) *dorothea* Alexander, of the central and southern Rocky Mountains, by the venation and, especially, the structure of the male hypopygium. I consider both of the above flies as being members of *Hoplolabis* Osten Sacken, but it is becoming increasingly difficult to separate members of this group from the more extensive subgenera *Psiloconopa* Zetterstedt, 1840, and *Ilisia* Rondani, 1856.

General coloration gray, the praescutum without evident stripes; wings pale yellow, heavily patterned with dark brown; cell *1st* M_2 unarmed, strongly widened distally; male hypopygium with the blackened dististyle of the male hypopygium unusually compact; phallosome with two arms, a slender spinous rod directed laterad and a more spatulate blade directed caudad.

♂. Length about 5.5 mm.; wing 6.3 mm.

Rostrum black, sparsely pruinose; palpi black. Antennae relatively long, black, the pedicel a little brighter; flagellar segments, especially the outer ones, elongate; longest verticils a little exceeding the segments. Head dark gray; anterior vertex moderately wide.

Pronotum dark brown, sparsely pruinose; extreme lateral border, together with the anterior lateral pretergites light yellow. Mesonotum almost uniformly dark gray, the praescutum without evident stripes; pseudosutural foveae and tuberculate pits black; central portion of scutum not brightened, each lobe with vague indications of a dusky line near its mesal portion. Pleura dark gray; dorsopleural membrane obscure buffy yellow, weakly infuscated at near midlength. Halteres yellow. Legs with the coxae dark plumbeous; trochanters obscure

brownish yellow; femora obscure yellow, the tips brownish black; tibiae obscure yellow, the bases and tips more darkened, the former somewhat more extensively so; tarsi passing into dark brown. Wings with the ground color pale yellow, the prearcular field more whitened; a conspicuous dark brown pattern, including spots arranged as follows: Arculus; origin of Rs; Sc_2; a band along cord, extending from C to vein Cu, interrupted at vein M; R_2 and R_{1+2}; tip of R_3; two disconnected spots at outer end of cell *1st* M_2; smaller marginal brown spots at ends of all longitudinal veins, becoming larger on vein *2nd* A; veins pale brown, darker brown in the patterned areas. Venation: Cell *1st* M_2 unarmed, strongly widened distally, shorter than in *dorothea*; *m-cu* about one-half its own length before the fork of M, more oblique than in *dorothea*.

Abdomen, including hypopygium, brownish black. Blackened dististyle of male hypopygium unusually compact; two branches closely appressed, the more divergent inner arm a blackened cultrate blade. Phallosome with two arms, a slender spinous rod directed laterad and a longer more spatulate blade directed caudad.

Holotype: ♂; Mount Rainier, WASHINGTON, altitude 5,000 feet, July 14, 1940 (H. & M. Townes).

Ormosia (Ormosia) leptorhabda n. sp.

Ormosia (*Ormosia*) *leptorhabda* is entirely distinct from other generally similar species, such as *O.* (*O.*) *divergens* (Coquillett) and *O.* (*O.*) *flaveola* (Coquillett). The structure of the male hypopygium is entirely different from these allied forms having cell M_2 of the wings open by the atrophy of *m*, rather than the more common condition of being open by the atrophy of the basal section of vein M_3.

General coloration brown; antennae short; wings with a strong brown tinge; cell M_2 open by atrophy of *m*; anal veins divergent; male hypopygium with the inner dististyle a slender straight rod, the apex truncated and slightly expanded; phallosome consisting of a broad depressed-flattened plate, the

outer lateral angles produced into strong spines that are directed cephalad.

♂. Length about 4 mm.; wing 4.5 mm.; antenna about 0.8 mm.

Rostrum and palpi dark brown. Antennae dark brown throughout, short; flagellar segments relatively long, the more basal segments with very long verticils. Head gray.

Pronotum light brown, the pretergites restrictedly light yellow. Mesonotal praescutum brown, very sparsely pruinose, without pattern, the humeral region more reddish; posterior sclerites of notum brown. Pleura brownish yellow. Halteres with stem yellow, knob weakly darkened. Legs with the coxae and trochanters yellow; remainder of legs brown, the terminal tarsal segments brownish black. Wings with a strong brownish tinge, the prearcular and basal costal fields more yellow; stigmal region a trifle darker; veins pale brown, those in the brightened portions more yellow; macrotrichia brown, only moderately abundant but well-distributed over the surface. Venation: R_2 subequal to R_{2+3}; cell M_2 open by the atrophy of m; cell M_3 much longer than its petiole; *m-cu* about one-fifth its own length beyond the fork of M; anal veins divergent.

Abdomen dark brown; hypopygium more brownish yellow. Male hypopygium with the tergite large, subtriangular in outline, widely dilated outwardly, the caudal margin pale, truncated or very feebly emarginate. Outer dististyle a flattened dark lobe, the apical portion set with parallel rows of microscopic spines. Inner dististyle somewhat shorter, appearing as a straight slender rod, the apex slightly dilated and bluntly truncate, the lower or inner margin with a white membrane provided with several scattered small pale setae from conspicuous raised tubercles. Phallosome with the central portion a depressed-flattened heart-shaped blade, its apex obtusely rounded; behind this central blade a much broader, depressed-flattened plate, the caudal-lateral portions of which are produced into a strong spine directed cephalad and slightly outward.

Holotype: ♂; Crescent City, Del Norte Co., CALIFORNIA, August 1, 1940 (H. & M. Townes).

Ormosia (Ormosia) profunda n. sp.

Ormosia (*Ormosia*) *profunda* is quite different from the other members of the *manicata* group so far made known, in some respects tending to connect this group with others in the genus. The shape of the tergite and structure of both dististyles readily separate this fly from other related described species.

Allied to *manicata*; general coloration reddish brown, with three confluent darker brown stripes; antennae short, flagellar verticils very long; anal veins divergent; male hypopygium with lobes of tergite parallel-sided, not dilated or darkened outwardly, separated by a very deep and narrow notch; outer dististyle flattened, split by a narrow notch into two very unequal lobes; inner dististyle a flattened blade with a triangular flange on face; elongate blades of phallosome much shorter and stouter than in other members of the group.

♂. Length about 4.2 mm.; wing 4.8 mm.; antenna about 0.9 mm.

Rostrum and palpi brownish black. Antennae (♂) short, dark brown throughout; flagellar segments cylindrical to subcylindrical, with unusually long verticils, those of the subbasal segments exceeding three times the length of the segment or nearly one-third the length of the entire flagellum. Head dark brownish gray.

Pronotum infuscated, paler laterally; pretergites pale yellow. Mesonotal praescutum reddish brown with three confluent darker brown stripes; posterior sclerites of notum similarly darkened. Pleura obscure yellow throughout. Halteres with stem yellow, knob weakly darkened. Legs with coxae and trochanters light yellow; femora and tibiae pale brown, the tarsi passing into brownish black. Wings subhyaline, the stigmal region weakly darker; veins brown. Venation: R_2 nearly equal in length to R_{2+3}; cell M_2 open by atrophy of M_3; *m-cu* erect, gently sinuous, just before fork of M; Anal veins divergent.

Abdomen, including hypopygium, dark brown. Male hypopygium with the ninth tergite conspicuous, projecting caudad into a median plate that divides into two narrow lobes that are about parallel-sided for their entire length; tips of lobes paler, obliquely rounded, not expanded at tips as in *manicata* and allies; notch separating the lobes very deep and narrow, extending back to about the basal third of the tergal projection. Basistyle produced beyond point of origin of dististyles into a subacute lobe. Outer dististyle paler than the inner, flattened, split by a narrow notch into two very unequal lobes, the inner one short and obtuse. Inner dististyle of irregular conformation, appearing as a flattened blade, the base arcuate; face of expanded portion produced into a conspicuous triangular point or flange. Elongate blades of phallosome much shorter and stouter than in *manicata,* the blackened inner apophyses much as in members of the latter group.

Holotype: ♂; Crescent City, Del Norte Co., CALIFORNIA, August 1, 1940 (H. & M. Townes).

Molophilus (Molophilus) rainieriensis n. sp.

Molophilus (*Molophilus*) *rainieriensis* suggests the Eastern *M.* (*M.*) *pubipennis* (Osten Sacken) and related forms but is well-distinguished by the short antennae in both sexes. From the regional members of the *pubipennis* subgroup having short antennae, such as *M.* (*M.*) *forcipulus* (Osten Sacken) and *M.* (*M.*) *paulus* Bergroth, it is readily told by the coloration of the body and wings.

Belongs to the *gracilis* group, *pubipennis* subgroup; general coloration yellow, the mesonotal praescutum with three confluent reddish stripes; antennae short in both sexes; scape and pedicel obscure yellow, flagellum black; head yellow; fore femora chiefly blackened, posterior femora yellow, the tips darkened; wings with a deep yellow tinge, the veins darker yellow; male hypopygium with the outer dististyle a long slender curved hook, the basal two-thirds nearly straight, with only three or four spinous points, all on basal portion.

♂. Length about 3.8 mm.; wing 4.5 mm.; antenna about 1 mm.

♀. Length about 4.5 mm.; wing 4.8 mm.

Rostrum yellow; palpi black. Antennae short in both sexes; scape and pedicel obscure yellow, flagellum black; flagellum (♂) with basal segments short and crowded, their ends truncated and closely applied to one another; outer segments long-oval; segments with relatively long verticils. Head shiny yellow.

Pronotum pale yellow, the lateral pretergites yellowish white. Mesonotal praescutum almost covered by three confluent reddish stripes, the humeral and lateral borders light yellow; posterior sclerites of notum reddish, the scutellum yellow, the postnotum variegated by yellow spots. Pleura reddish yellow, indistinctly patterned with yellow areas. Halteres uniformly pale yellow. Legs with the coxae and trochanters yellow; fore femora chiefly blackened, only the basal third brighter; fore tibiae light brown, the tips darker; tarsi passing into brownish black; posterior legs yellow, the tips of femora, tibiae and basitarsi narrowly darkened. Wings with a deep yellow tinge; veins darker yellow; macrotrichia brown. Venation: R_2 almost in transverse alignment with *r-m*; petiole of cell M_3 exceeding three times the length of *m-cu*; vein *2nd A* long and gently sinuous, ending just before the level of *m-cu*.

Abdomen brownish yellow, the male hypopygium deeper yellow. Hypopygium with the outer lobe of basistyle ending about on a level with the tip of the inner dististyle. Outer dististyle a long slender curved hook, the basal two-thirds nearly straight, the distal portion bent at nearly a right angle into a long black spine; basal portion of style with three or four small spinous points and scattered setae. Inner dististyle a flattened darkened plate, covered with microscopic scabrous points, the obtuse apex directed strongly mesad. Basistyle with the spinous points relatively short and stout, appearing as long cones, about 25–30 in number.

Holotype: ♂; Mount Rainier, WASHINGTON, altitude 2,700 feet, July 8, 1940 (H. & M. Townes). *Allotopotype,* ♀, with the type.

A New Species of Calendra from Oregon. (Coleoptera, Curculionidae.)

By A. F. SATTERTHWAIT, Bureau of Entomology and Plant Quarantine, United States Department of Agriculture.

Mr. Borys Malkin, University of Oregon, Eugene, Oreg., a successful collector of corn billbugs, included in his sendings of *Calendra* to the writer the following new species, which is similar to *C. venatus* (Say) except that it lacks the typical apical fossa of the pronotum.

Calendra eugenia, n. sp.

Male: Front tibia broadly rounded at outer apical angle. Third joint of front tarsus about one-half wider than second, that of middle and hind tarsi about same width as second, all glabrous beneath.

Elytra with the odd intervals 1, 3, and 5 slightly elevated and wider than the even intervals, punctures fine, uniseriate in 3 and 5, slightly confused in 1. Punctures very slightly coarser on even intervals. Strial punctures rather coarse, 10 or 11 in basal half of each of the first two striae.

Pronotum with median vitta slender at base and apex, widest before middle; lateral vittae well marked on basal half, with branches indistinct. Punctures largest and somewhat confluent in basal areas between vittae, confluent and nearly as large near apex though affecting much less area. Collar distinct, complete. No apical fossa.

Beak slightly compressed, three-fourths as thick at middle as it is deep at apex; not flattened above; lower apical angle obtuse; curvatures of upper and lower profiles fairly regular. Interocular puncture deep, not circular, about 3 times as long as broad, with a faint impressed line nearly as long as basal width of rostrum.

Pygidium with moderately coarse punctures beset with short setae on apical third, without keel or tufts. Apex broadly rounded. Depression of metasternum of first and second sternites well defined.

General color red, the head, pronotal elevations, and under parts nearly black. Coating thin, gray, largely abraded on the elevations.

Measurements of male (in mm.): Rostrum, width at middle 0.27, at apex 0.29, at base 0.58, depth at apex 0.40, length 1.95; pronotum, width 2.22, length 2.73; width of body 2.73, length of elytra 3.99, total length 8.10.

Type: male, and one paratype, female, deposited in the United States National Museum through the courtesy of Mr. Malkin. Other paratypes, five male and two female, all collected June 26, 1941, at Eugene, OREGON, were studied and measured before the particular male and female specimens were selected for description.

Female: Tibiae, tarsi, and elytra as in the male, except nearly all black. Pronotum with median vitta scarcely reaching to base, but median and lateral vittae reaching to apex, punctures of each fine to apex. Central area of median vitta impunctate. Lateral vittae with broad, short branch at middle. Punctures between median and lateral vittae coarse, confluent; between laterals and branches, less confluent. Punctures and setae of pygidium as in male, but apex narrowly rounded. Interocular puncture round, but with two rows of punctures cutting into it apically, suggesting the pattern of the male, in which the puncture appeared much longer than wide. No impressed line.

Measurements of female (in mm.): Rostrum, width at middle 0.28, at apex 0.35, at base 0.60, depth at apex 0.45, length 2.25; pronotum, width 2.47, length 2.81; width of body 2.92, length of elytra 4.00, total length 7.75.

In the nine specimens, the red color on the dorsum, especially on the elytra, was conspicuous in four males and one female, much reduced in two males, and lacking in two females. Total lengths ranged from 7.0 to 9.0 mm.

One male and one female are retained in the *Calendra* collection of the Division of Cereal and Forage Insect Investigations of the Bureau of Entomology and Plant Quarantine at Urbana, Ill., and four males and one female are returned to Mr. Malkin.

Current Entomological Literature

COMPILED BY THE EDITORIAL STAFF.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia and the University of Pennsylvania, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. Continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

NOTE: The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the List of Journals given at the end of the literature. The number of the volume, and in some cases, the part, heft, &c. is followed by a colon (:). References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to Neotropical species, and not so indicated in the title, have the symbol (S).

Papers published in ENTOMOLOGICAL NEWS are not listed.

GENERAL—ANON.—The American commission of scientific nomenclature in entomology. [4] 74: 216. ANDRADE, EDMUNDO NAVARRO DE.—Obituary. [105] 13: 182–188, port. EATON, JR., & CHANDLER.—The fauna of forest-humus layers in New York. [Cornell Univ. Agr. Exp. Sta. Mem.] 247: 1–26. FOSBERG, F. R.—Segregation of type specimens. [68] 96: 515–516. FOX, I.—The use of creosote in mounting fleas and other arthropods on slides. [68] 96: 478. MORGAN, A. H.—Field book of animals in winter. Putnam's Sons, New York. Insects, p. 143–278; spiders, p. 279–285; ill. NORMAN, J. R.—A photographic record of The Linnaean Collections. [Proc. Linn. Soc. London] 154: 50–57. PARMENTER, L.—A note on insect vision. [21] 54: 136. RICKETT, H. W.—What is in a generic name? [68] 97: 15–16. (Grammatical.) SMITH, P. S.—On "An artist's note." [21] 54: 126–29. SMITH, R. C.—Guide to the literature of the zoological sciences. [Burgess Pub. Co.] 128 pp. TEALE, E. W.—Where do insects go in winter? [Nat. Hist. N. Y.] 51: 28–37, ill. VALENTINE, J. M.—On the preparation and preservation of insects, with particular reference to coleoptera. [60] 103: (6), 16 pp. WILTSHIRE, E. P.—Some reflections on geographical constancy. [27] 54: 109–111.

ANATOMY, PHYSIOLOGY, ETC.—Anderson, & Oliver.—Effect of double matings on the fertility of a mutant Drosophila melanogaster. [129] p. 60. Anderson, & Richards.—An electron microscope study of some structural colors of insects. [Jour. Appl. Physics] 13: 748–758, ill. Bodenstein, D.—Hormones in Drosophila. [129] p. 12. Carlson, J. G.—Immediate effects of 31r x-rays on the different stages of mitosis in neuroblasts of Chortophaga. [J. Morph.] 71: 449–461, ill. Gowen, J. W.—On the genetic basis for hermaphroditism. (Drosophila.) [129] p. 8. Gowan, & Nelson.—Predetermination of sex. [68] 96: 558. Gray, I. E.—The normal changes in weight and water content during the life cycle of the wood-eating beetle, Passalus cornutus Fab. [129] p. 9. Gunn, D. L. & C. A. Cosway.—The temperature and humidity relations of the cockroach. VI. Oxygen consumption. [33] 19: 124–132. Jahn, T. L.—The effect of temperature on the retinal action potential. [129] p. 85. Ludwig, D.—Comparative effects of low humidities on water loss and reproductive capacity in two species of Saturnid moths. [129] p. 56. Martin, & Hare.—The nutritional requirements of Tenebrio molitor larvae. [92] 83: 428–437. Pfeiffer, I. W.—Suppression of metamorphosis in the grasshopper Melanoplus differentialis. [129] p. 36. Pickford, G. E.—Studies on the digestive enzymes of spiders. [Trans. Conn. Acad. A. & Sci.] 35: 33–72. Powers, P. B. A.—Metrical studies on spermatogonial chromosomes of Acrididae. [J. Morph.] 71: 523–575, ill. Schmieder, R. G.—The control of metamorphosis in Hymenoptera. [129] p. 64. Tahmisian, Allen & Bodine.—Endomitosis (?) in grasshopper serosa cells. [129] p. 52. Villee, C. A.—Tetraltera, a new homoeotic mutant in Drosophila melanogaster. [129] p. 48. Waddington, C. H.—Some developmental effects of x-rays in Drosophila. [33] 19: 101–117. Wolf, E.—Spacial relations of ommatidia in insects and differential sensitivity to moving visual stimuli. [129] p. 19–20. Worley, L. G.—Amitosis in the malpighian tubules of Melanoplus differentialis. [129] p. 51. Wulff, & Jahn.—Intensity-EMF relations of the

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NOTICE.

Owing to circumstances beyond our control, some of which we have mentioned in the December, 1942 issue, there may be considerable delays in the appearance of some numbers of the NEWS.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Arctic Lepidoptera especially **Noctuidae**—Wanted to hear from collectors who desire the Arctic Species. Have large collection. R. J. Fitch. Lloydminster, Saskatchewan, Canada.

Wanted—Tropical Lepidoptera and Insects. Also domestic species. Will exchange or buy specimens. M. A. Zappalorti, 253 Senator Street, Brooklyn, N. Y.

Wanted—Specimens of the genus Calendra (Sphenophorus) from North America. Will exchange Eastern U. S. Calendra or other Coleoptera for desired species. R. C. Casselberry, 302 Lincoln Avenue, Lansdowne, Penna.

Coccinellidae wanted from all parts of the world, especially South and Central America. Buy or exchange. G. H. Dieke, 1101 Argonne Drive, Baltimore, Md.

I shall be grateful to anyone who will give me any reference where insects taken on Mt. Desert Island, Maine, have been used wholly or in part in describing a species.

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BLOOD DONOR PROJECT

Plasma, processed from blood donated to the Army and Navy through the Red Cross Blood Donor Service is proving to be a literal life saver to our wounded fighting men. Surgeon General Ross T. McIntire of the Navy recently asserted that, thanks to plasma and other improved methods of treating casualties, the Navy was losing less than one percent of those wounded on Guadalcanal. In the last World War more than seven percent died of their wounds.

In the tropic jungles of New Guinea and the Solomons, Army and Navy doctors have found another talking point for plasma. Should a regular blood transfusion be undertaken the donor might subsequently prove to be an unsuspected malaria case. The use of plasma eliminates this possibility.

This year the Red Cross has been requested to supply 4,000,000 blood donations. This and all other Red Cross work is financed through the 1943 Red Cross War Fund. A goal of $125,000,000 has been set, to be raised in March.

Let that last year's collecting outfit serve for the present

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